UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,804	08/24/2001	Isaac Mayzlin	CARDIFF.053A	2168

20995 7590 12/12/2006

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER	
LE, BRIAN Q	

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 12/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/938,804	MAYZLIN, ISAAC	
	Examiner	Art Unit	
	Brian Q. Le	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *5-14 and 36* is/are allowed.

6)☒ Claim(s) *1,15-21 and 24-35* is/are rejected.

7)☒ Claim(s) *2-4, and 22-33* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment and Arguments

1. Applicant's amendment filed October 10, 2006, has been entered and made of record.

2. Applicant's arguments with regard to claims 1, 15, 19, 24-27, and 30-35 have been fully considered, but are not considered persuasive because of the following reasons:

Regarding independent claims 1, 15, 19, 25, 27, and 35, the Applicant argues (page 10 of the Remarks) that neither Huttenlocher (U.S. Patent No. 6,249,604) nor Zhou et al. (U.S. Patent No. 5,892,843) teach the amended limitation "inserting bytes having non-white pixels into a serious of bytes having no non-white pixels **such that at least a portion of the identified gaps is eliminated**" (emphasis added). The Examiner respectfully disagrees. Huttenlocher teaches this limitation at column 15, lines 29-35 and column 16, lines 53-65 wherein "...the result of the median filtering is that the relatively small spacing between characters (which can be interpret as gaps) between characters in a word generally becomes inconsequential, and is filled with black pixels (the process of filling gaps with black pixel clearly is to eliminate gaps)." (column 15, lines 29-33).

Thus, the rejections of all of the claims are maintained.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 15, 19, 24-27 and 30-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Huttenlocher U.S. Patent No. 6,249,604 and Zhou et al. U.S. Patent No. 5,892,843.

Regarding claim 1, Huttenlocher teaches a method for improving optical recognition of text (column 6, lines 18-20 and 27-30) in an electronic bitmap including non-white pixels and white pixels (column 9, lines 25-32) through preprocessing of the bitmap (column 7, lines 25-29) in a computer (column 9, lines 10-20), the computer comprising:

a) receiving the bit map (FIG. 1A, input and column 9, line 45);

b) locating one or more bytes (binary/pixels processing) having no non-white pixels in the received bitmap, wherein the locating identifies gaps in character strokes (column 15, lines 45-67);

c) inserting bytes (binary/pixels processing) having non-white pixels into a series of bytes having no non-white pixels (column 15, lines 29-35 and column 16, lines 53-65); and

d) optically recognizing the bitmap for a predefined class of text characters (column 18, lines 46-57).

However, Huttenlocher does not explicitly teach the identification of gaps within the pattern of character strokes. Zhou teaches a method of processing optical recognition of text (column 2, lines 4-8) in bitmap (FIG. 1, element 22) wherein identifies gaps within the pattern of character strokes (FIG. 4, "number of holes"; FIG. 7; column 5, lines 50-67 and column 6, lines 20-30). Modifying Huttenlocher's method of processing optical recognition of text according to Zhou would be able to identify gaps within the pattern of character strokes. This would improve the processing of recognition by further aid in discriminating between text and photographic

regions (column 7, lines 30-31) and therefore, it would have been obvious to one of the ordinary skill in the art to modify Huttenlocher according to Zhou.

For claim 15, Huttenlocher teaches a system (column 9, lines 10-20) to improve optical recognition of text (column 6, lines 18-20) in an electronic bitmap including non-pixels and white pixels (column 9, lines 25-32), the system comprising:

A computer environment (column 9, lines 10-20); and

A software program operating the computer environment (column 9, lines 10-20), comprising:

A receive module configured to receive the bitmap (FIG. 1A, input and column 9, line 45),

An enhancement module configured to enhance the bitmap obtained from the receive module, wherein the enhancement module performs a contiguity analysis and selective insertion of pixels based on the contiguity analysis, wherein the contiguity analysis indentifies gaps in character strokes (column 15, lines 29-35 and column 16, lines 53-65), and

A recognition module configured to recognize the text in the enhanced bitmap (column 18, lines 46-57).

Referring to claim 19, please refer back to claims 1 and 15 for the teachings and explanations.

Regarding claim 21, Huttenlocher teaches the method wherein the contiguity analysis identifies a vertical gap in image data between two image objects, each image object being located at the same horizontal position on the bitmap as the gap (FIG. 5B)

Regarding claim 24, Huttenlocher teaches the method wherein the bitmap, arranged as columns and rows, is processed along each column in succession (FIG. 23).

For claim 25, please refer back to claims 1 and 15 for the teachings and explanations. Also, Huttenlocher teaches a computer-readable medium containing instructions for controlling a computer environment (commands entered at user interface) (column 9, lines 10-24).

For claim 26, please refer back to claim 25 for the teachings and explanations.

Regarding claims 27, please refer back to claims 1, 15, 19, 25 and 26 for the teachings and explanations.

Referring to claim 30, Huttenlocher teaches the method wherein inserting bytes having non-white pixels into a series of bytes having no non-white pixels comprises eliminating at least a portion of the identified gaps in character strokes (add black pixels) (column 16, line 55; FIG. 13A, element 304 and element 314; FIG. 13B, element 316).

For claim 31, Huttenlocher discloses the method wherein the received bitmap comprises a plurality of bytes and wherein the locating of bytes having no non-white pixels comprises comparing vertically adjacent ones of the bytes of the bitmap (FIG. 15A - FIG.15B).

As to claim 32, Huttenlocher teaches a method wherein the gaps in character strokes are vertical gaps (FIG. 15A - FIG.15B).

For claim 33, Huttenlocher discloses the system wherein the pixels that are selectively inserted are non-white pixels (add black pixels) (column 16, line 55; FIG. 13A, element 304 and element 314; FIG. 13B, element 316).

For claim 34, please refer back to claim 32 for the teachings and explanations.

For claim 35, please refer back to claim 1 for the teachings and explanations.

5. Claims 16-18, 20, and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Huttenlocher U.S. Patent No. 6,249,604 and Zhou et al. U.S. Patent No. 5,892,843 as applied to claim 15 above, and further in view of Lopresti U.S. Patent No. 5,748,807.

For claim 16, Huttenlocher teaches a process wherein the enhancement module utilizing binary processing. Huttenlocher does not explicitly teaches the enhancement module performs one of a byte length process, a bitwise process or a multi-bit process. Lopresti teaches an improving optical character recognition (column 1, lines 8-13) wherein the enhancement module (8-bit check-sum) performs one of a byte length process, a bitwise process or a multi-bit process (8-bit check-sum/byte length process) (column 9, lines 21-40). Modifying Huttenlocher's method of improving optical recognition of text according to Lopresti would able to multi-bit/byte length processing to further detect and correct error of character recognition. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Huttenlocher according to Lopresti.

Regarding claim 17, Huttenlocher teaches the system wherein the computer environment is connected to an optical scanner (OCR method and scanner to perform OCR) (column 7, lines 20-22 and column 9, line 15).

Referring to claim 18, Huttenlocher discloses the system wherein the computer environment is connected to a network and receives the bitmap via the network (the connection of all apparatuses together) (column 9, lines 10-24).

For claim 20, please refer back to claim 16 for the teachings and explanations.

For claim 28, please refer back to claim 16 for the teachings and explanations.

6. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huttenlocher et al. U.S. Patent No. 6,249,604.

Regarding claim 29, Huttenlocher teaches a concept of each bit is displayed as a unique pixel (each pixel corresponding to a unique radian value) (FIG. 4D). The Examiner takes Official Notice that each byte in binary data comprises eight bits. It would have been obvious for one skilled in the art to continue using this binary system to process binary data since it is a well-known system in binary data analysis.

Allowable Subject Matter

7. Claims 2-4, and 22-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 5-14 and 36 allowed.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Q. Le whose telephone number is 571-272-7424. The examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BL
December 4, 2006

JINGGE WU
PRIMARY EXAMINER